

WHAT IS CLAIMED IS:

1. Apparatus for permitting the transfer of organic material from a donor onto a substrate to form a layer of organic material on one or more OLED devices, wherein the donor includes a laser light-absorbing layer, and a layer with heat transferable organic material, comprising:
 - a) means for providing a movable laser for producing a beam of light and at least one lens for focusing such light beam at a position corresponding to the laser light-absorbing layer in the donor;
 - b) a first fixture arranged to support the donor and substrate in a relationship relative to one another whereby there will be either a separation between portions of the substrate and the donor, or the substrate and donor will be in contact, and wherein organic material will be transferred onto portions of the substrate;
 - c) a second fixture including a pressure plate aligned with and engaging the first fixture, the donor being supported on the pressure plate and the pressure plate being movable to clamp the donor and substrate to the first fixture and forming a chamber relative to a non-transfer surface of the donor;
 - d) means for supplying a fluid to the chamber to apply pressure to the non-transfer surface of the donor so as to ensure the position of the donor relative to the substrate;
 - e) the first fixture including a transparent portion located in relationship to the non-transfer surface of the donor to permit transmission of the laser light beam through such transparent portion to the non-transfer surface of the donor; and
 - f) means for maintaining the spacing of the laser relative to the donor so that the laser light-absorbing layer is within the focal plane of the laser light beam to within ± 35 microns, the laser being positioned so that the laser light is focused on the laser light-absorbing layer as the laser light beam moves across the donor to permit heat to be absorbed which causes the transfer of organic material to the substrate.

2. The apparatus of claim 1 wherein the fluid is a gas or liquid.
3. The apparatus of claim 1 wherein the laser light-absorbing layer includes radiation-absorbing material capable of absorbing radiation in a predetermined portion of the spectrum for producing heat which will cause the transfer of organic material.
4. The apparatus of claim 1 further including means for maintaining the position of the donor after it is clamped by the pressure plate to the first fixture.
5. The apparatus of claim 4 wherein the maintaining means includes an o-ring mounted on the first fixture which is compressed when the pressure plate is clamped to the first fixture.
6. The apparatus of claim 3 wherein the radiation-absorbing material is in the form of a patterned layer selected to cause a patterned transfer of organic material.
7. The apparatus of claim 3 further including a vacuum chamber and wherein the apparatus is provided in such vacuum chamber.
8. The apparatus of claim 3 wherein the donor is formed in a sheet.
9. The apparatus of claim 5 wherein the maintaining means includes means for mounting the pressure plate to apply uniform pressure to the o-ring around the perimeter of the donor.